Fastener Tightening Specifications

Application	Specification	
	Metric	English
Propeller Shaft Rubber Coupling to Propeller Shaft Retaining Bolts and Nuts.	20 N-m +55°	15 lb ft +55°
Centre Bearing to Body Retaining Bolts.	22 N-m	16 lb ft
Propeller Shaft Rubber Coupling to Propeller Shaft Yoke Retaining Bolts and Nuts.	20 N-m +55°	15 lb ft +55°
Propeller Shaft Coupling to Differential Flange Retaining Bolts.	115 N-m	85 lb ft
Propeller Shaft Rubber Coupling to Transmission Flange Retaining Bolts and Nuts (torque bolt, hold nut).	100 N-m	72 lb ft

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Adhesives, Fluids, Lubricants, and Sealers

Application	Type of Material
Slip Yoke Splines	Molybdenum Disulphide Grease

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Propeller Shaft Replacement

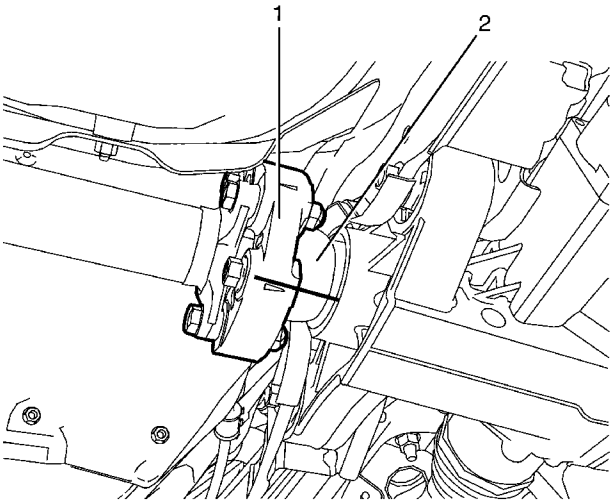
Removal Procedure

1. Select park/1st gear position in the transmission and apply the park brake.

   Caution: Refer to Vehicle Lifting Caution in the Preface section.

   Caution: Refer to Safety Glasses Caution in the Preface section.

2. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle .
3. Remove the intermediate exhaust assembly. Refer to Exhaust Crossover Pipe Replacement .
4. Remove the propeller shaft heat shield. Refer to Exhaust Heat Shield Replacement - Center .



Important: Observe the orientation of the rubber couplings with reference to the differential flange and the transmission flange. This will minimise the potential of incorrect propeller shaft installation.

5. Mark the rubber coupling (1) in relation to the differential flange (2).

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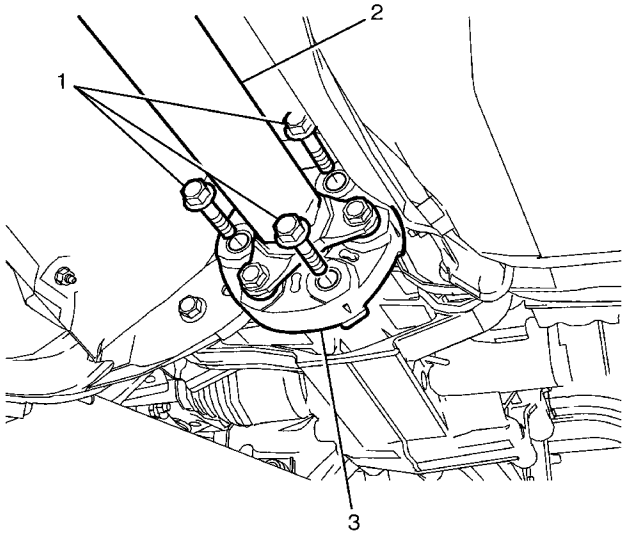
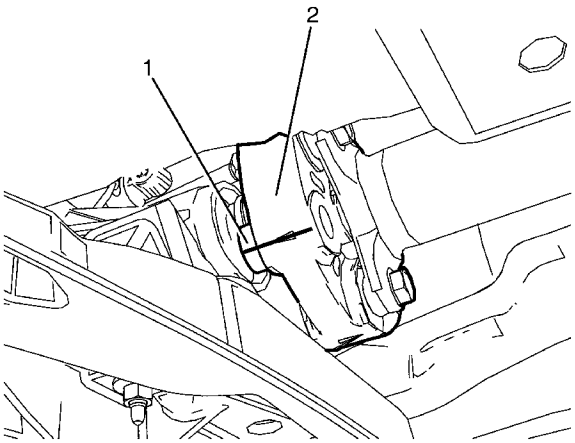


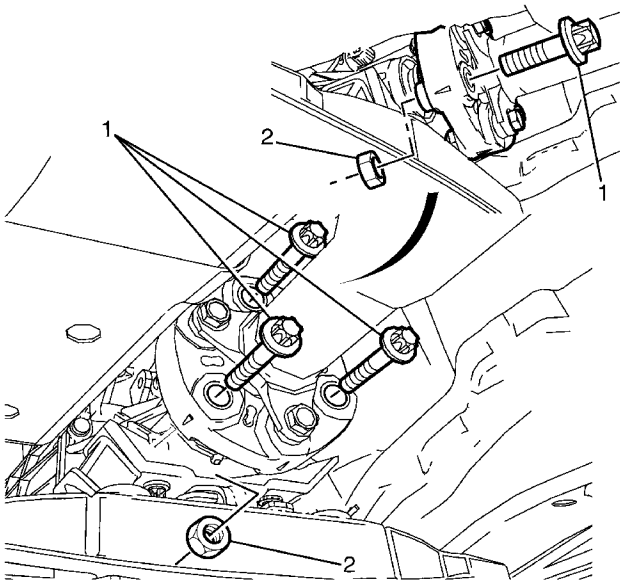
Important: With the aid of an assistant or suitable jack support the propeller shaft (2).

6. Remove the rubber coupling to differential flange retaining bolts (1).



Important: Observe the orientation of the rubber couplings with reference to the differential flange and the transmission flange. This recommendation will minimise the potential of incorrect propeller shaft installation.

7. Mark the rubber coupling (2) in relation to the transmission flange (1).

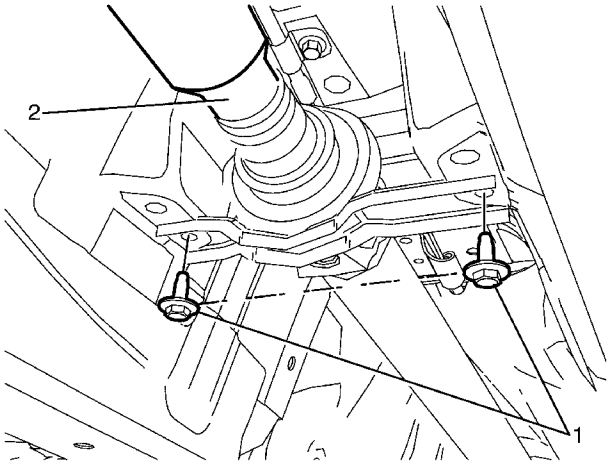


Important: With the aid of an assistant or suitable jack support the propeller shaft.

Important: Torque prevailing nuts with are single use parts and must be discarded after removal.

8. Remove the rubber coupling to transmission flange retaining bolts (1) and torque prevailing nuts (2).

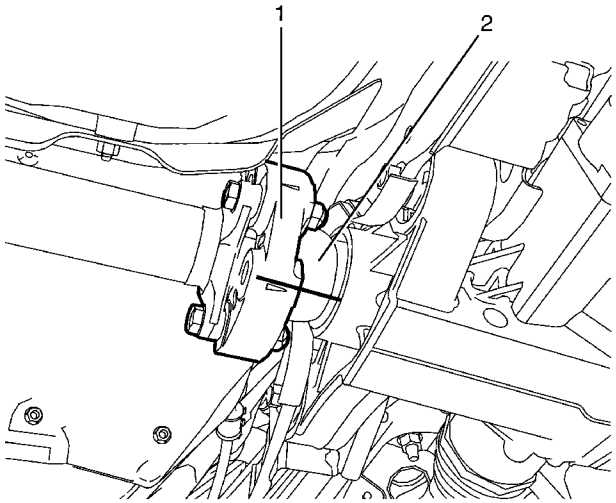
   Discard the nuts.



Important: With the aid of an assistant or suitable jack support the propeller shaft (2).

9. Remove the centre bearing to body retaining bolts (1).
10. Disconnect the propeller shaft (2) from the differential flange.
11. Remove the propeller shaft (2) from the vehicle.
12. Inspect the propeller shaft (2) assembly for excessive wear and/or damage. Inspect the following:
    - Propeller shaft. For replacement refer to Propeller Shaft Replacement .
    - Rubber coupling. For replacement refer to Rear Propeller Shaft Coupling Replacement .
    - Centre bearing. For replacement refer to Propeller Shaft Center Support Bearing Replacement .
    - Universal joint. For replacement refer to Universal Joint Replacement .

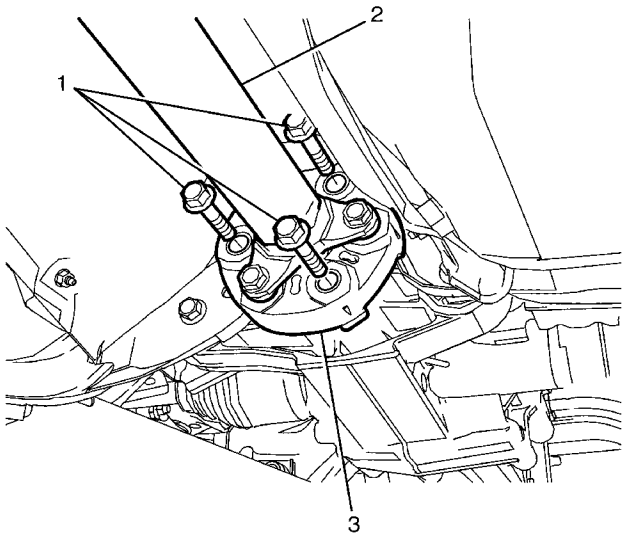
Installation Procedure



Important: Align the marks on the rubber coupling (1) to differential flange (2) made prior to removal.

1. Connect the rubber coupling (1) to the differential flange (2).

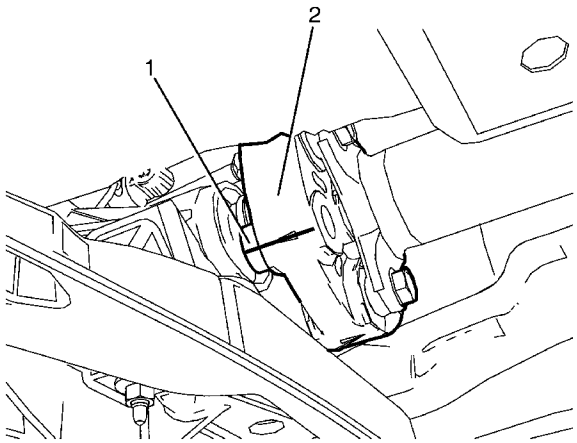
Notice: Refer to Fastener Notice in the Preface section.



Important: With the aid of an assistant or suitable jack support the propeller shaft (2) to the differential flange (3).

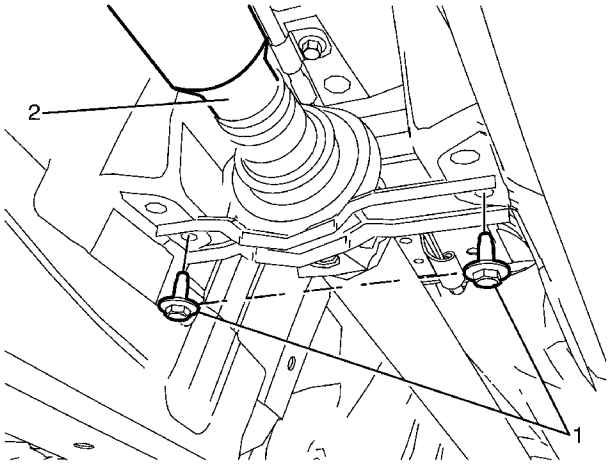
2. Install the rubber coupling to differential flange retaining bolts (1).

Tighten
Tighten the bolts to 115 N-m (85 lb ft).



Important: Align the marks on the rubber coupling (2) to transmission flange (1) made prior to removal.

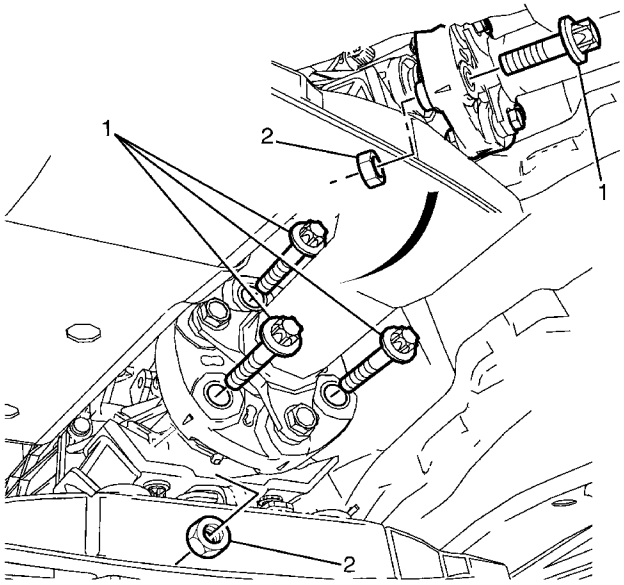
3. Connect the rubber coupling (2) to transmission flange (1).



Important: With the aid of an assistant or suitable jack support the propeller shaft (2).

Important: The centre bearing to body retaining bolts (1) must not be fully tightened at this stage.

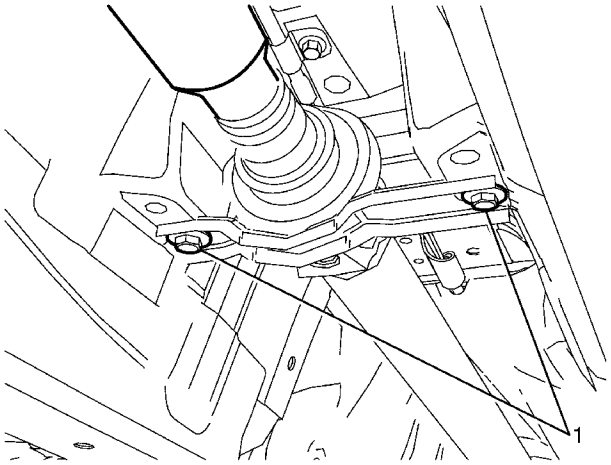
4. Install the centre bearing to body retaining bolts (1).



Important: With the aid of an assistant or suitable jack support the propeller shaft.

5. Install the rubber coupling to transmission flange bolts (1) and NEW torque prevailing nuts (2).

Tighten
Tighten the bolts and nuts to 100 N-m (72 lb ft).



6. Tighten the centre bearing to body retaining bolts (1).

Tighten
Tighten the bolts to 22 N-m (16 lb ft).

7. Install the propeller shaft heat shield. Refer to Exhaust Heat Shield Replacement - Center .
8. Install the intermediate exhaust assembly. Refer to Exhaust Crossover Pipe Replacement .
9. Remove the safety stands.
10. Lower the vehicle to the ground.

Two-Piece Propeller Shaft Replacement

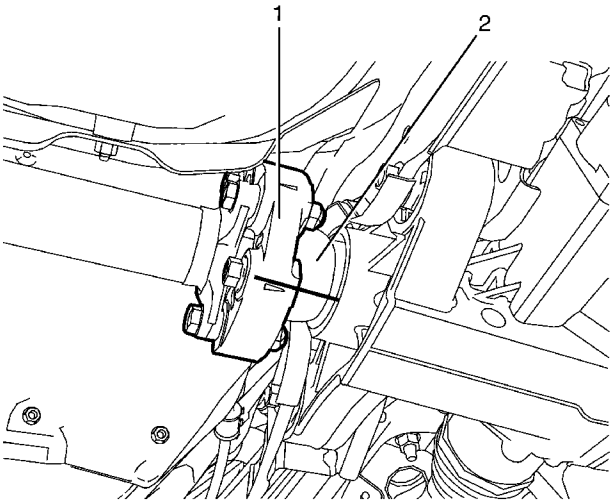
Removal Procedure

1. Select park/1st gear position in the transmission and apply the park brake.

   Caution: Refer to Vehicle Lifting Caution in the Preface section.

   Caution: Refer to Safety Glasses Caution in the Preface section.

2. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
3. Remove the intermediate exhaust assembly. Refer to Exhaust Crossover Pipe Replacement.
4. Remove the propeller shaft heat shield. Refer to Exhaust Heat Shield Replacement - Center.



Important: Observe the orientation of the rubber couplings with reference to the differential flange and the transmission flange. This will minimise the potential of incorrect propeller shaft installation.

5. Mark the rubber coupling (1) in relation to the differential flange (2).

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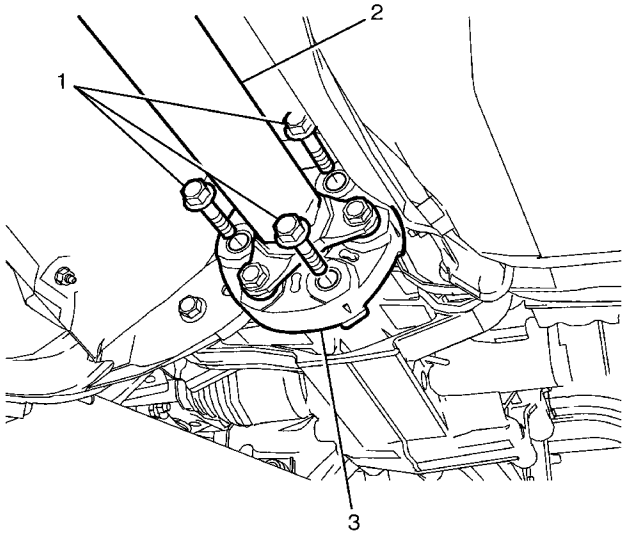
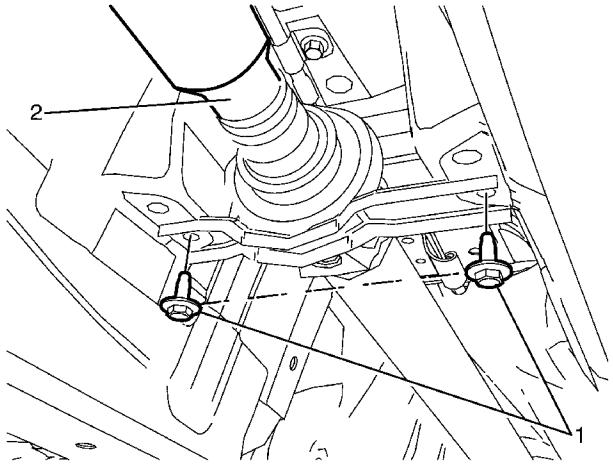


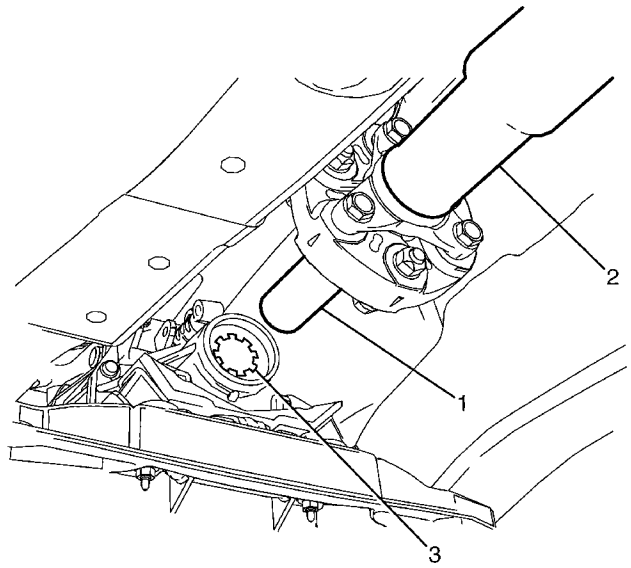
Important: With the aid of an assistant or suitable jack support the propeller shaft (2).

6. Remove the rubber coupling to differential bolts (1).



Important: With the aid of an assistant or suitable jack support the propeller shaft (2).

7. Remove the centre bearing to body retaining bolts (1).
8. Disconnect the propeller shaft (2) from the differential flange.
9. Place a suitable container under the transmission in order to collect draining fluid.



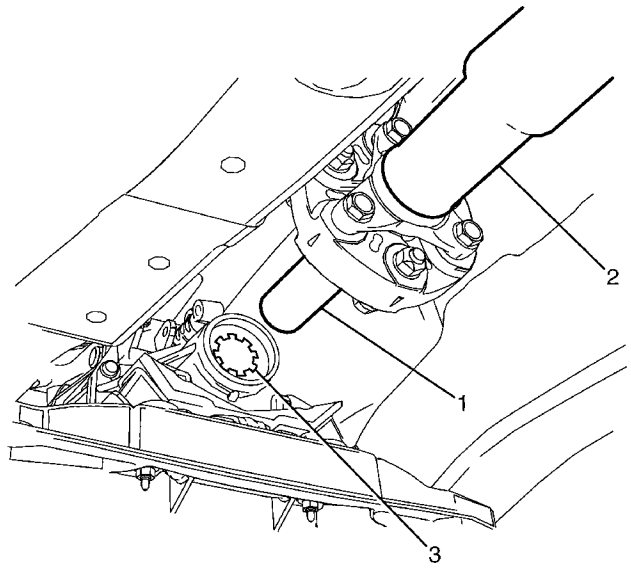
Important: Do not damage the oil seal when disconnecting the propeller shaft (2) from the transmission. Cuts or abrasions will damage the oil seal and result in lubricant leakage from this area.

Important: Support the propeller shaft front yoke (1) and move the propeller shaft (2) rearward to disconnect the propeller shaft front yoke (1) from the transmission shaft splines (3).

10. With the aid of an assistant remove the propeller shaft (2) from the vehicle.
11. Insert a suitable plug to the transmission shaft splines (3) to prevent loss of transmission lubricant.
12. Inspect the propeller shaft (2) for excessive wear and/or damage. Inspect the following:
    - Propeller shaft. For replacement refer to Propeller Shaft Replacement.
    - Rubber coupling. For replacement refer to Rear Propeller Shaft Coupling Replacement.
    - Centre Bearing. For replacement refer to Propeller Shaft Center Support Bearing Replacement.
    - Universal joint. For replacement refer to Universal Joint Replacement.

Installation Procedure

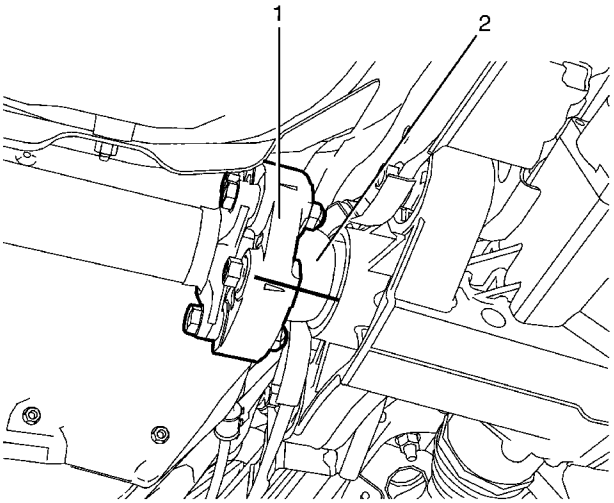
1. Remove the transmission plug installed prior to prevent loss of lubricant.



Important: Do not to damage the oil seal when installing the propeller shaft (2) to the transmission. Cuts or abrasions will damage the oil seal and result in lubricant leakage from this area.

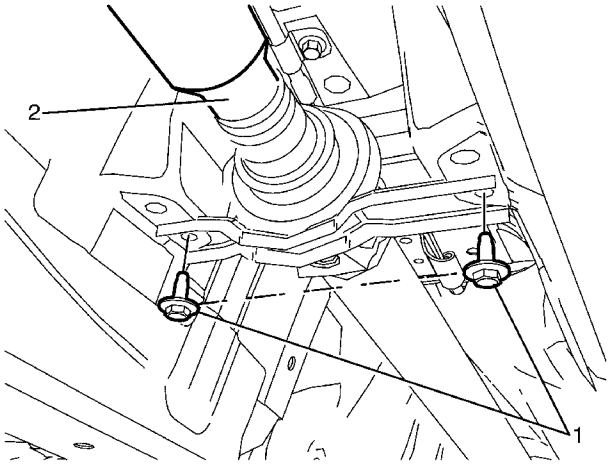
Important: Support the propeller shaft yoke (1) and install the propeller shaft (2) forward to connect the propeller shaft yoke (1) to the transmission output shaft splines (3).

2. With the aid of an assistant install the propeller shaft (2) to the transmission.



Important: Align the marks on rubber coupling (1) to the differential flange (2) made prior to removal.

3. Connect the rubber coupling (1) to the differential flange (2).

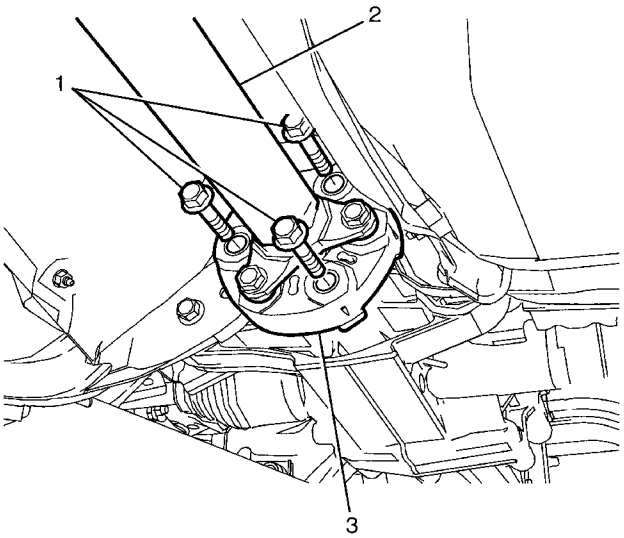


Important: With the aid of an assistant or suitable jack support the propeller shaft (2).

Important: The centre bearing to body retaining bolts (1) must not be fully tightened at this stage.

4. Install the centre bearing to body retaining bolts (1).

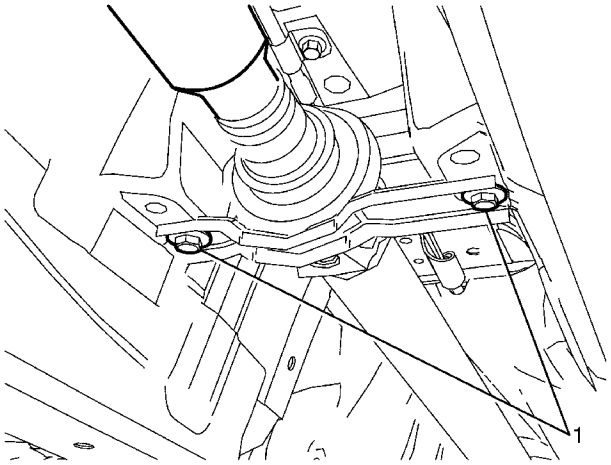
Notice: Refer to Fastener Notice in the Preface section.



Important: With the aid of an assistant or suitable jack support the propeller shaft (2) to the differential flange (3).

5. Install the rubber coupling to differential flange retaining bolts (1).

   Tighten
   Tighten the bolts to 115 N-m (85 lb ft).



6. Tighten the centre bearing to body retaining bolts (1).

   Tighten
   Tighten the bolts to 22 N-m (15 lb ft).

7. Install the propeller shaft heat shield. Refer to Exhaust Heat Shield Replacement - Center.
8. Install the intermediate exhaust assembly. Refer to Exhaust Crossover Pipe Replacement.
9. Remove the safety stands.
10. Lower the vehicle to the ground.

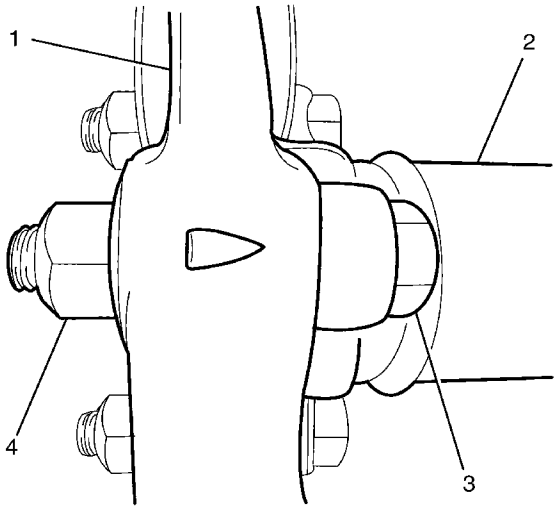
Rear Propeller Shaft Coupling Replacement

Removal Procedure

Caution: Refer to Safety Glasses Caution in the Preface section.

Caution: Refer to Vehicle Lifting Caution in the Preface section.

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
2. Remove the propeller shaft from the vehicle. Refer to Propeller Shaft Replacement.



Important: Torque prevailing nuts with are single use parts and must be discarded after removal.

3. Remove the rubber coupling to propeller shaft retaining bolts (3) and torque prevailing nuts (4).

   Discard the nuts.

4. Remove the rubber coupling (1) from the propeller shaft (2).

Installation Procedure

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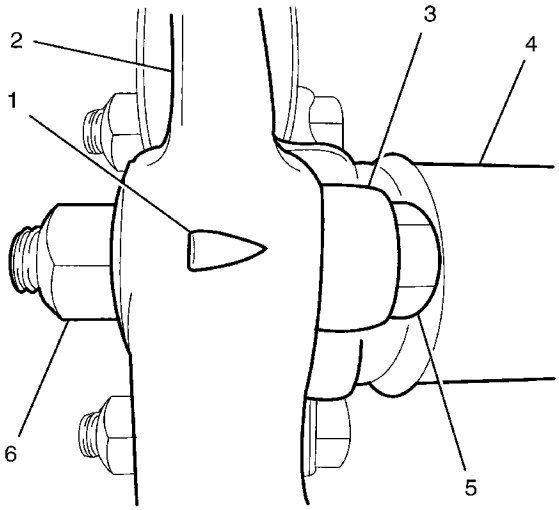


Important: The triangular mark (1) on the rubber coupling (2) must face towards the propeller shaft flange lug (3).

1. Install the rubber coupling (2) to the propeller shaft (4).

   Notice: Refer to Fastener Notice in the Preface section.

2. Install the rubber coupling to propeller shaft retaining bolts (5) and NEW torque prevailing nuts (6).

   Tighten
   Tighten the bolts and nuts to 20 N-m +55° (15 lb ft +55°).

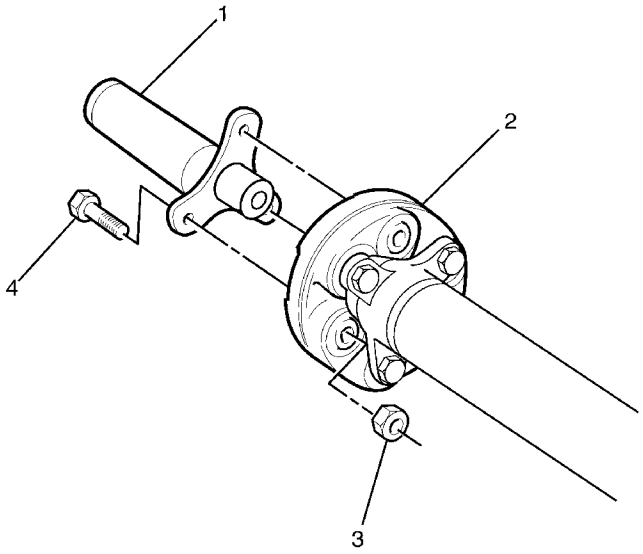
3. Install the propeller shaft to the vehicle. Refer to Propeller Shaft Replacement.
4. Remove the safety stands.
5. Lower the vehicle to the ground.

Removal Procedure - Front Slip Joint

Caution: Refer to Safety Glasses Caution in the Preface section.

Caution: Refer to Vehicle Lifting Caution in the Preface section.

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
2. Remove the propeller shaft from the vehicle. Refer to Propeller Shaft Replacement.

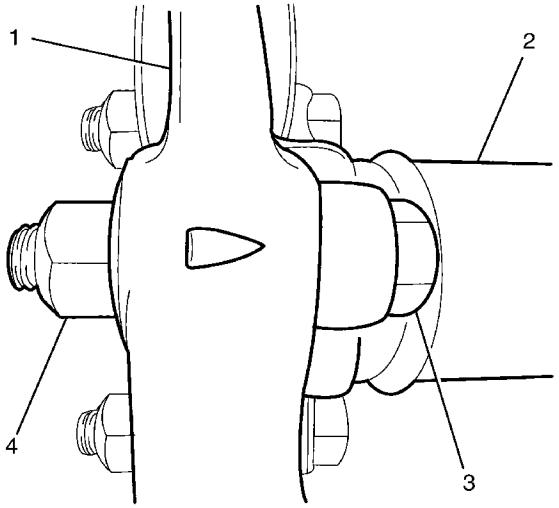


Important: Torque prevailing nuts with are single use parts and must be discarded after removal.

3. Remove the rubber coupling to propeller shaft yoke retaining bolts (4) and torque prevailing nuts (3).

   Discard the nuts.

4. Remove the propeller shaft yoke (1) from the rubber coupling (2).



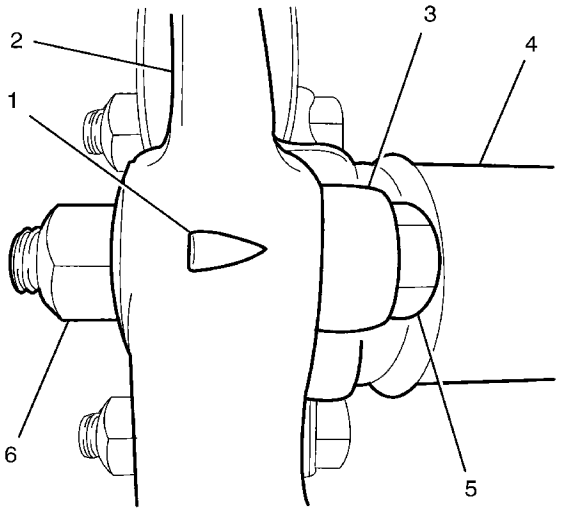
Important: Torque prevailing nuts with are single use parts and must be discarded after removal.

5. Remove the rubber coupling to propeller shaft retaining bolts (3) and torque prevailing nuts (4).

   Discard the nuts.

6. Remove the rubber coupling (1) from the propeller shaft (2).

Installation Procedure - Front Slip Joint



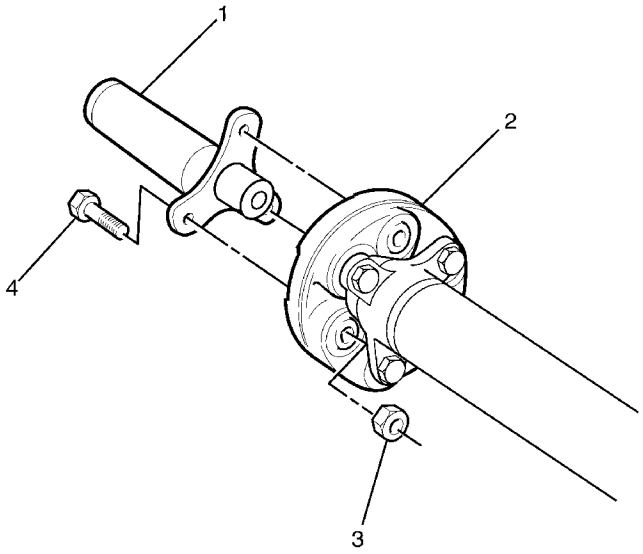
Important: The triangular mark (1) on the propeller shaft rubber coupling (2) must align with the propeller shaft flange lug (3).

1. Install the rubber coupling (2) to the propeller shaft (4).

   Notice: Refer to Fastener Notice in the Preface section.

2. Install the rubber coupling to propeller shaft retaining bolts (5) and NEW torque prevailing nuts (6).

   Tighten
   Tighten the bolts and nuts to 20 N-m +55° (15 lb ft +55°).



3. Install the propeller shaft yoke (1) to the rubber coupling (2).
4. Install the propeller shaft yoke to rubber coupling retaining bolts (4) and NEW torque prevailing nuts (3).

Tighten
Tighten the bolts and nuts to 20 N-m +55° (15 lb ft +55°).

5. Install the propeller shaft to the vehicle. Refer to Propeller Shaft Replacement.
6. Remove the safety stands.
7. Lower the vehicle to the ground.

Propeller Shaft Center Support Bearing Replacement

Tools Required

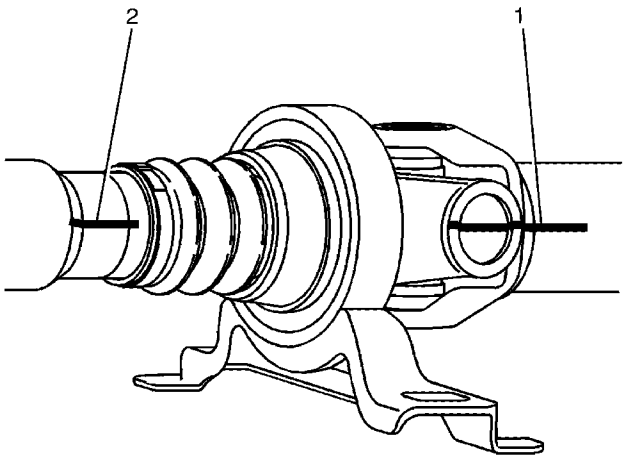
- J 21426 Installer.
- J-22912-01 Press Plates.
- J 22610 Keystone Pliers.
- J 5590 Bearing and Seal Driver.

Removal Procedure

Caution: Refer to Safety Glasses Caution in the Preface section.

Caution: Refer to Vehicle Lifting Caution in the Preface section.

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle .
2. Remove the propeller shaft from the vehicle. Refer to Propeller Shaft Replacement .



Important: Never clamp the propeller shaft tubing in a vise. Clamping the propeller shaft tubing in a vise could dent or deform the tube causing an imbalance or unsafe condition. Always clamp on one of the propeller shaft yokes and support the propeller shaft horizontally.

Important: Correct alignment during assembly is critical in order to maintain correct balance.

Important: The propeller shaft splines are not keyed, therefore, alignment marks are necessary for assembly.

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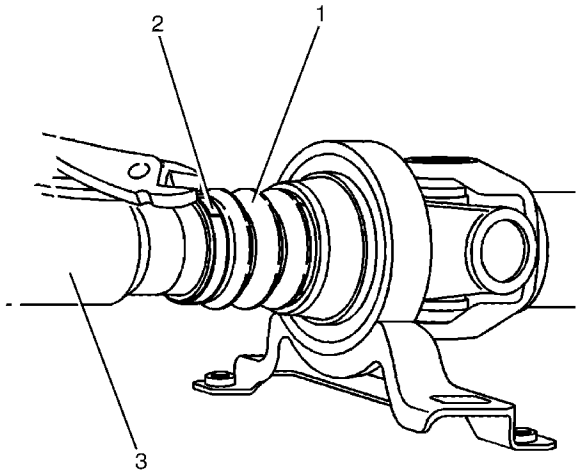
3. Mark the position of the propeller shaft rear section (1) in relation to the propeller shaft front section (2).

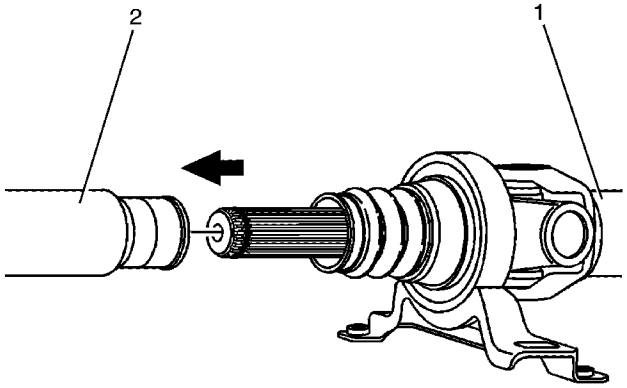


Important: The dust boot clamp is a single use part and must be discarded after use.

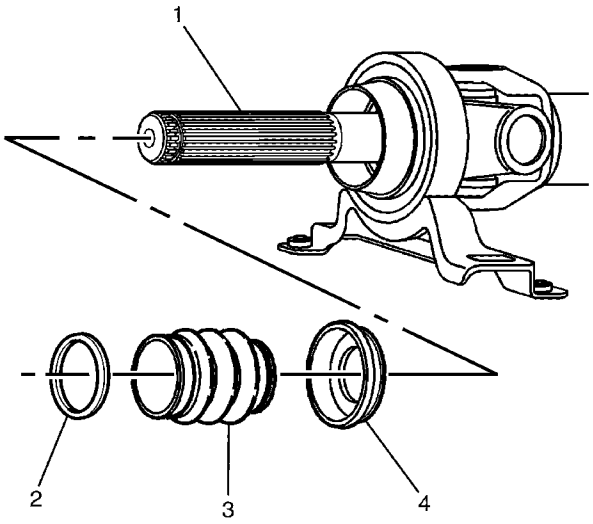
4. Remove the dust boot to propeller shaft front section clamp (2).

   Discard the dust boot clamp.

5. Detach the dust boot (1) from the propeller shaft (3).



6. Separate the propeller shaft rear section (1) from the propeller shaft front section (2).



Important: The spline retention O-ring (2) is a single use part and must be discarded after use.

7. Remove the spline retention O-ring (2) from the propeller shaft (1).

   Discard the spline retention O-ring.

   Important: The dust boot (3) is a single use part and must be discarded after use.

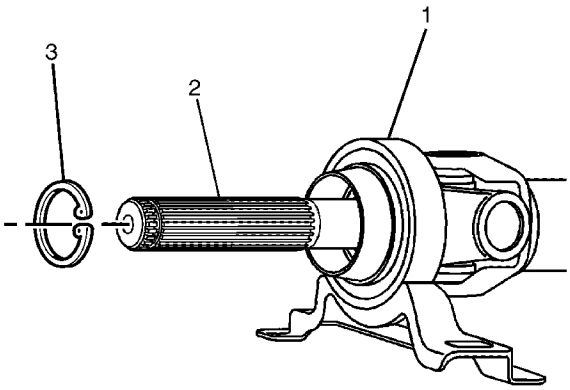
8. Remove the dust boot (3) from the propeller shaft (1).

   Discard the dust boot.

   Important: The centre bearing slinger (4) is a single use part and must be discarded after use.

9. Remove the centre bearing slinger (4) from the propeller shaft (1).

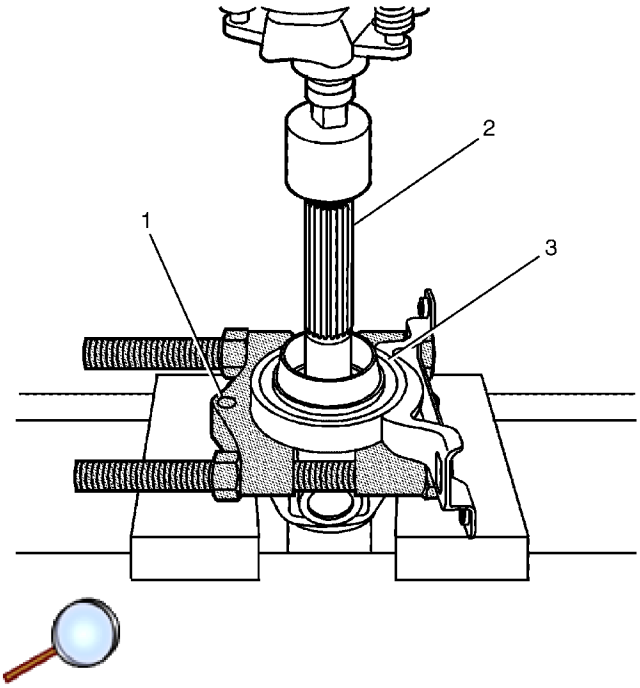
   Discard the centre bearing slinger.



Important: The circlip (3) is a single use part and must be discarded after use.

10. Remove the propeller shaft (2) to centre bearing (1) retaining circlip (3).

    Discard the circlip.



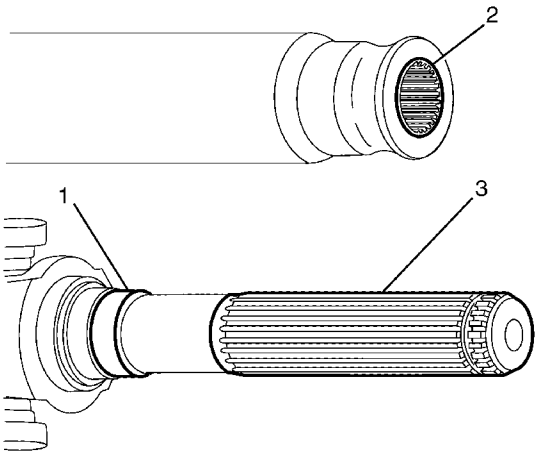
Important: Observe the orientation and depth of the centre bearing (3) in relation to the propeller shaft (2).

Important: Install the J-22912-01 (1) to the rear propeller shaft (2) behind the centre

bearing (3). Place the rear propeller shaft (2) in a suitable press and remove the centre bearing (3).

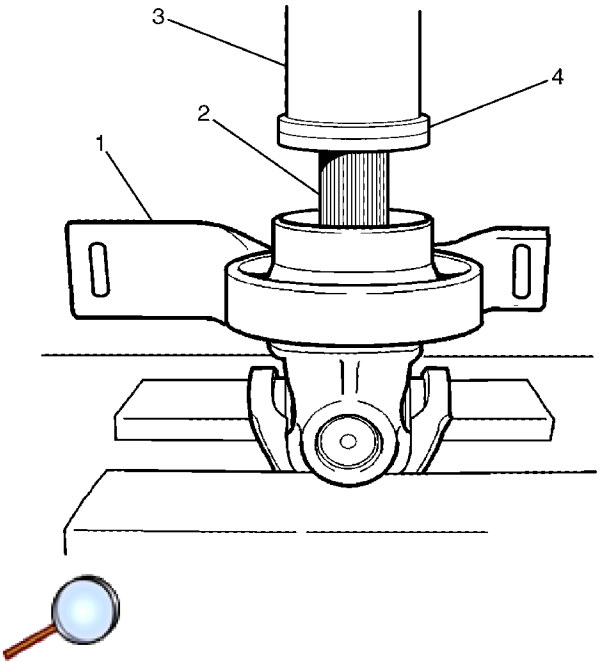
11. Remove the centre bearing (3) from the propeller shaft (2).

Clean and Inspect



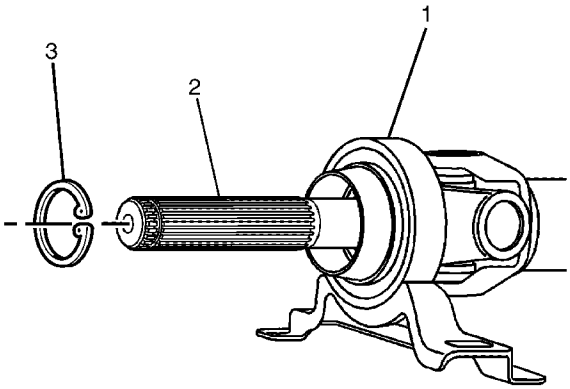
1. Clean the grease from the front propeller shaft spline (2) and rear propeller shaft spline (3).
2. Check the front propeller shaft spline (2) and rear propeller shaft spline (3) for damage and/or wear.
3. Remove any corrosion or debris from the bearing area (1).

Installation Procedure

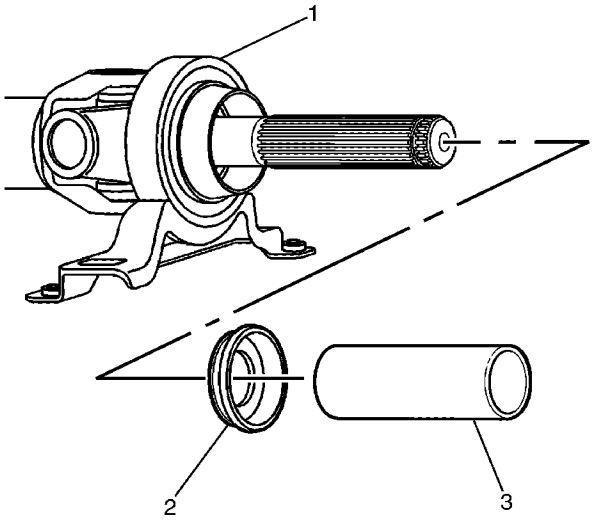


Important: Use a suitable press to install the centre bearing (1) with J 5590 Bearing and Seal Driver (3) and adaptor (4) until it seats and the circlip groove is visible.

1. Install the centre bearing (1) to the propeller shaft (2).

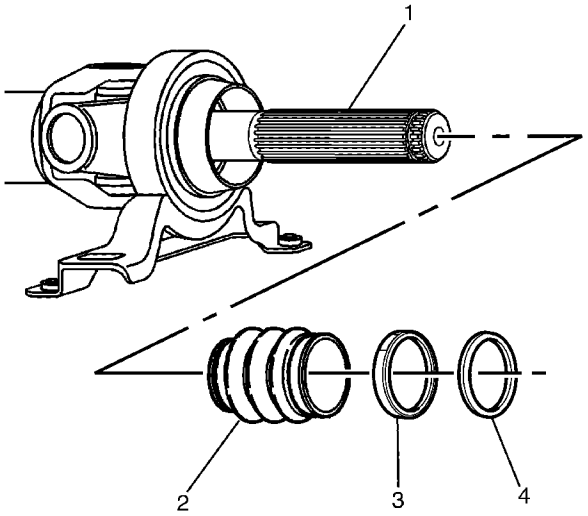


2. Install the propeller shaft (2) to centre bearing (1) NEW retaining circlip (3).



Important: Install the centre bearing slinger (1) with J 21426 (3) until it seats fully onto the centre bearing (1).

3. Install the NEW centre bearing slinger (2).



Important: Lubricate the propeller shaft splines (1) with 1-2 grams of molybdenum disulphide grease. Refer to Adhesives, Fluids, Lubricants, and Sealers .

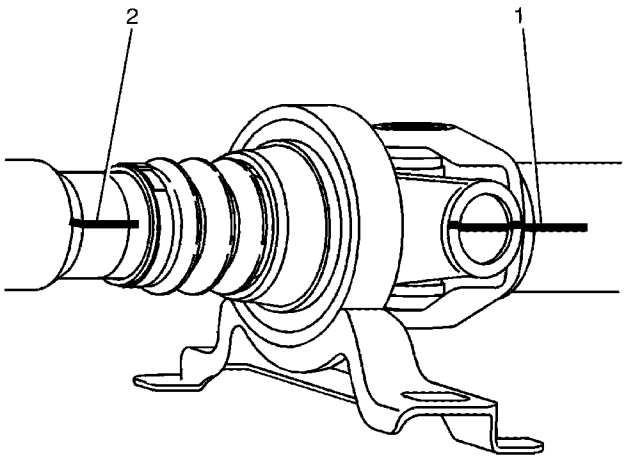
4. Lubricate the propeller shaft splines (1).

Important: The NEW dust boot clamp (3) must not to be fully tightened at this stage.

5. Install the NEW dust boot (2) and NEW dust boot clamp (3) to propeller shaft rear section (1). Do not fully tighten the dust boot clamp.

   Important: The O-ring must be located into the groove on the spline.

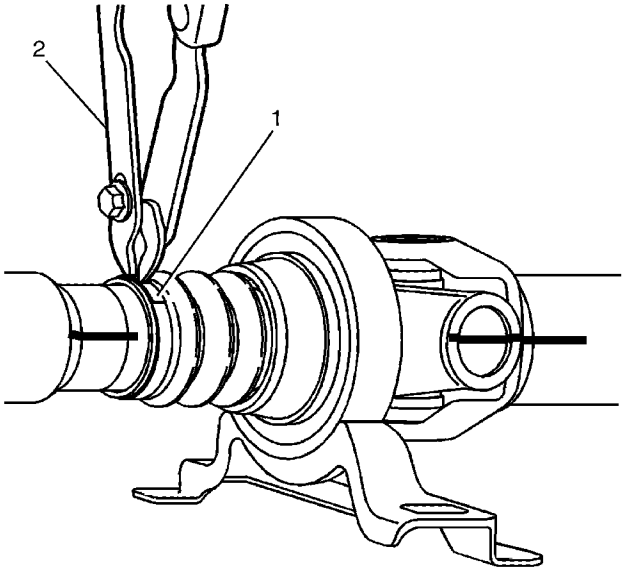
6. Install the NEW spline sealing O-ring (4) to the propeller shaft (1).



   Important: Correct alignment during assembly is critical in order to maintain correct balance.

   Important: Align the marks on the rear propeller shaft (1) and the front propeller shaft (2) made prior to ensure correct assembly balance.

7. Connect the propeller shaft rear section (1) to the propeller shaft front section (2).
8. Attach the NEW dust boot (3) to the propeller shaft front section (2).



9. Tighten the NEW dust boot clamp (1) using J 22610 keystone pliers (2).
10. Install the propeller shaft to the vehicle. Refer to Propeller Shaft Replacement .
11. Remove the safety stands.
12. Lower the vehicle to the ground.